

WHAT IS CLAIMED IS:

1. A power system for outputting voltage to a load by switching between power devices, comprising:

a DC-DC converter for controlling an output voltage at a predetermined level, comprising an inductor, switching elements for supplying input voltage to said load via said inductor, a drive circuit that generates a drive signal for complementarily performing on/off control of said switching elements at a predetermined time ratio, and a control circuit that switches said drive circuit on or off and that controls the time ratio at said switching elements by a feedback signal based on said output voltage to said load;

a pseudo-feedback-signal generating circuit that generates a pseudo feedback signal in synchronization with said drive signal of said DC-DC converter; and

a series regulator that supplies said input voltage to said load after stepping down said input voltage;

wherein when said load is light, the drive circuit of said DC-DC converter is switched off and voltage is supplied to said load from said series regulator;

wherein when said load is heavy, the voltage supply from said series regulator is halted and the drive circuit of said DC-DC converter is switched on to supply voltage to said load;

wherein when a voltage supply source to said load is switched from said series regulator to said DC-DC converter, voltage is continually supplied from said series regulator to said load for a predetermined period of time; and

wherein said DC-DC converter supplies said pseudo feedback signal in place of the feedback signal to said control circuit while leaving said drive circuit off to control the time ratio at said switching elements, and when said predetermined period of time elapses, halts voltage supply from said series regulator, switches said pseudo feedback signal to said feedback signal, and starts on/off operations of said switching elements by switching on said drive circuit.

2. The power system according to claim 1, wherein said pseudo-feedback-signal generating circuit comprises a first and a second resistor connected in series between the output side of the control circuit of said DC-DC converter and the ground potential, and a capacitance connected between the connection point between said first and said second resistors and the ground potential, and wherein said pseudo-feedback-signal generating circuit outputs said pseudo feedback signal from the connection point between said first and second resistors.

3. The power system according to claim 2, wherein the feedback signal to said control circuit is obtained by dividing the output voltage to said load by a third and a fourth resistor, and wherein the voltage division ratio at said first and second resistors is set so as to be equal to that at said third and fourth resistors.

4. The power system according to claim 1, wherein said pseudo-feedback-signal generating circuit comprises a first and a second resistor connected in series between the output side of the control circuit of said DC-DC converter and the ground potential, a capacitance connected between the connection point between said first and second resistors and the ground potential, a fifth and a sixth resistor connected in series so that the output voltage to said load is divided at the same voltage division ratio as that at said first and second resistors, and an operational amplifier that inputs the connection point voltage between said first and second resistors and the connection point voltage between said fifth and sixth resistors and outputs said pseudo feedback signal.